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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MICHAEL P. GALLIGAN, JOSEPH C. DETTLING,  
SHAU-LIN F. CHEN, and MATTHEW P. LARKIN

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Appeal 2009-014247  
Application 10/612,658  
Technology Center 1700

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Before EDWARD C. KIMLIN, CHUNG K. PAK, and  
KAREN M. HASTINGS, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision finally rejecting claims 1 through 3, 5, 6, 30 through 35, and 37 through 43, all of the claims pending in the above-identified application. We have jurisdiction under 35 U.S.C. § 6.

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

## STATEMENT OF THE CASE

The subject matter on appeal is directed to “pliable refractory metal carriers on which a catalyst composition may be coated to provide conformable catalyst members” (Spec. 1, ll. 18-19). The pliable refractory metal carrier is made of an elongated tube of corrugated construction (corrugation defined by alternating rings separated by annular webs along the length of the elongated tube) or an elongated cylindrical shape made of a plurality of perforated plate members disposed in a face-to-face linear array such that the resulting conformable catalyst member can be bent to conform with curves and bends along the length of an exhaust pipe (Spec. 10, ll. 24-32). Details of the appealed subject matter are recited in representative claims 1 and 34<sup>2</sup> reproduced from the Claims Appendix to the Appeal Brief (“App. Br.”) filed December 11, 2008, as shown below:

1. A conformable catalyst member comprising a refractory metal pliable carrier comprising a tube of corrugated construction, the tube having an elongate body portion which is dimensioned and configured to be mounted in a curved or bent configuration along its length within a bent or curved portion of an exhaust pipe having an open discharge end, the pliable carrier having coated thereon an intermetallic anchor layer having a catalytic coating applied thereto which remains intact on the carrier when the conformable catalyst member is bent along its length and mounted within a bent or curved portion of an exhaust pipe.

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<sup>2</sup> The claims considered by the previous merits panel in the decisions entered in Appeal Nos. 2007-1178 (Application 10/376,836) and 2007-1018 (Application 10/376,782) referred to by the Examiner at page 3 of the Answer do not require the use of a pliable refractory metal carrier as part of a conformable catalyst as required by the claims in this appeal.

34. A catalyst member for treating noxious components of engine exhaust gas comprising a pliable refractory metal carrier comprising a plurality of perforated plate members having opposite faces and disposed in a face-to-face linear array to impart a cylindrical shape having a length to the carrier and to form accordion pleats, the plate members having protrusions extending from their faces which space adjacent plate members from each other, the carrier having coated thereon an intermetallic anchor layer and a catalytic coating, the catalyst member being conformable along its length such that when placed in a bent or curved configuration to provide intimate contact of the exhaust gas with the catalytic coating of conformable catalyst member to promote reactions to convert noxious components of the exhaust gas, the catalytic coating remains intact on the carrier.

As evidence of unpatentability of the claimed subject matter, the Examiner relies on the following prior art references at page 4 of the Answer<sup>3</sup>:

Rondeau	US 4,027,367	Jun. 7, 1977
Ishida	US 4,455,281	Jun. 19, 1984
Donomoto	US 4,798,770	Jan. 17, 1989
Gorynin	US 5,204,302	Apr. 20, 1993
Draghi	US 6,042,879	Mar. 28, 2000
Uchida	EP 0 831 211 A1	Mar. 25, 1998

Appellants seek review of the following grounds of rejection set forth in the Answer:

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<sup>3</sup> The Examiner refers to US 5,713,906 issued to Grothues-Spork on Feb. 3, 1998, US 6,221,075 B1 issued to Törmälä on Apr. 24, 2001, and US 2001/0006008 A1 issued to Dean on Jul. 5, 2001, but did not rely on them in the statements of rejection set forth in the Answer.

1. Claims 1 through 3, 5, 6, 31 through 34, 37, 38, and 40 through 43 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Ishida and Uchida;

2. Claims 30, 35, and 39 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Ishida, Uchida, and either Donomoto or Draghi; and

3. Claims 1 through 3, 5, 6, 30 through 35, and 37 through 43 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Gorynin, Uchida, and optionally Rondeau and Ishida. (*See* App. Br. 10 and Ans. 5-13).

**RELEVANT FACTS, PRINCIPLES OF LAW, ISSUES, ANALYSES,  
AND CONCLUSIONS**

In recognizing that the prior art references relied upon do not teach or suggest the claimed functional limitations relating to, *inter alia*, bending and conformable properties, the Examiner takes the position that the claimed functional limitations are intended uses which do not further limit the claimed catalyst member and that the catalyst taught by either Ishida or Gorynin is capable of providing such claimed functions (Ans. 13-26).

Thus, the dispositive question raised here is: Has the Examiner shown that the claimed functionally defined bending and conformable properties are intended uses not further limiting the claimed catalyst member or that the catalyst taught by either Ishida or Gorynin is capable of providing such claimed functions? On this record, we answer this question in the negative.

As is apparent from the claims on appeal, the claimed conformable catalyst member has a pliable refractory metal carrier which is made of an elongated tube of corrugated construction or a cylindrical shape made of a

plurality of perforated plate members disposed in a face-to-face linear array, each of which is coated with catalytic materials. The claimed elongated tube of corrugated construction and cylindrical shape made of a plurality of perforated plate members *are such that they are bendable along their lengths* in conformance with curves and bends along the length of an exhaust pipe as correctly explained by Appellants at pages 12 through 14 of the Appeal Brief and pages 6 through 9 of the Reply Brief. The Specification states that the claimed functionally defined bendable and conformation properties require that the claimed carrier be specifically designed with a suitable pliable refractory material (Spec. 10, ll. 24-31). In particular, the Specification states that:

Conformable catalyst member 126 is, as mentioned above, of *corrugated construction having alternating rings 50 separated by annular webs 52.* . . . Refractory metal carrier 46 is made of a suitable refractory material . . . has *a wall thickness which, in conjunction with the corrugated construction, enables conformable catalyst member 126 to be bent to conform to curves and bends,* such as those of exhaust pipe 20 (Figure 1A) and exhaust pipe 42 (Figure 2A).

(*See Id.*) (emphasis added). In accordance with this disclosure in the Specification, the drawings in the above-identified application, namely Figures 3 and 5, also show that the claimed elongated tube or cylindrical shape carrier capable of performing the claimed bending and conforming functions requires corrugation structures, including those formed from a plurality of perforated plate members, in the form of *alternating rings separated by annular webs along the length of the elongated tube or cylindrical shape carrier.*

Thus, consistent with the written description in the Specification, we interpret the claimed functionally defined bending and conformation properties as limiting the material and design of the claimed elongated tube carrier of corrugated construction and cylindrical shape carrier made of a plurality of perforated plate members as explained *supra*. See *In re Stencel*, 828 F.2d 751, 754-55 (Fed. Cir. 1987) (holding that the functional limitation or intended purpose recited in a claim distinguishes the claimed device from the prior art device); *In re Watanabe*, 315 F.2d 924, 928 (CCPA 1963) (holding the claimed functional limitation or intended use recited in a claim limits the claimed electrode to a particular type of electrode having properties suitable for such function or intended use); *see also In re Garnero*, 412 F.2d 276, 279 (CCPA 1969) (The structure or property of a claimed product implied by process limitations must be considered when assessing the patentability of a product-by-process claim over the prior art.) On this record, the Examiner has not shown that the claimed functionally defined bending and conformation properties do not limit the material and design of the claimed elongated tube carrier of corrugated construction and cylindrical shape carrier made of a plurality of perforated plate members.

Having interpreted the claimed catalysts as having the above-mentioned materials and structures capable of performing the claimed functions consistent with *Watanabe*, we concur with Appellants that the Examiner has not demonstrated that the catalyst taught by either Ishida or Gorynin is capable of providing such claimed functions or has provided a reasonable basis to modify the catalyst taught by either Ishida or Gorynin to arrive at the claimed conformable catalyst member. In particular, the Examiner has not demonstrated that the catalyst taught by either Ishida or

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Gorynin has structures identical or substantially identical to the above mentioned structures (i.e., an elongated tube or cylindrical shape carrier having a sufficient wall thickness with alternating rings separated by annular webs along its length). Nor has the Examiner shown that one of ordinary skill in the art would have been led to modify the catalyst taught by either Ishida or Gorynin to arrive at the claimed conformable catalyst member having the above-discussed structures implied by the claimed functional limitations.

Accordingly, we reverse the Examiner's decision rejecting the claims on appeal under 35 U.S.C. § 103(a).

ORDER

Upon consideration of the record, and for the reasons given, it is ORDERED that the decision of the Examiner to reject the claims on appeal under 35 U.S.C. § 103(a) is REVERSED; and

FURTHER ORDERED that no time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

REVERSED

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